

3.13 Parcel 52 – Bldg 699 – Army/Air Force Exchange Services Gas Station

3.13.1 Site Description

Bldg 699 is a full-service gas station and convenience store located on the south side of Saltzman Avenue in the central portion of the MP. Bldg 699 was constructed in 1953 and has been used as a service station since that time. Bldg 699 is a one-story building built on slab and is approximately 4,628 square feet in size. Additional information pertaining to this parcel can be found in Section 5.2.1.1, Section 5.4, Section 5.13.2, and Appendix G of the Phase I ECP (1).

3.13.2 Previous Investigations

The Bldg 699 tank system was comprised of six 10,000-gallon USTs with two remote pumping islands. The six USTs were removed in April 2007 and replaced with two 10,000-gallon ASTs. Prior to their removal in 2007, the USTs stored various grades of gasoline. On November 5, 1984, a tank tightness test identified a 0.333 gallon per hour leak in two of the USTs. No action was taken until 1989 when a line leak was identified; subsequently, the piping was excavated and replaced. Since that time, a groundwater pump system (to recover free product and to control the plume) has been operating in conjunction with a quarterly groundwater monitoring program under the IRP (FTMM-53). Thirteen monitoring wells were installed at the site in order to delineate the extent of the contaminant plume. Subsequently, consecutive quarterly rounds of groundwater samples have been collected for analysis. BTEX and MTBE have been detected both in soil and groundwater above NJDEP Direct Contact Soil Cleanup Criteria and GWQC. A remedial action work plan specifying the installation of an air sparging/SVE system, plus an expanded groundwater pump and treat system, was submitted and approved by the NJDEP. In addition, the use of enzyme enhanced bioremediation products was stipulated for the localized treatment of soils in dense silt and clay areas. Construction of the selected remedial alternative was completed in January 2001. Currently, as part of a monitoring program, 13 groundwater monitoring wells are sampled on a quarterly basis. The cleanup strategy is to continue remedial action operation (air sparge, SVE, pump and treat system) activities and monitoring efforts at the Bldg 699 site. Shutdown of the treatment system is expected in FY09, and quarterly groundwater monitoring of 13 wells will be performed for 2 years after shutdown.

3.13.3 Site Investigation Sampling

Through previous investigations, groundwater VO contamination has been identified in close proximity to Bldg 699 and is being addressed under the IRP. Per NJDEP guidance and consistent with USEPA policy, the NJDEP recommends investigation of VI where structures are within 100 ft horizontally or vertically of shallow groundwater contamination in excess of GWSLs. In the case of petroleum hydrocarbon contamination (particularly BTEX), a 30-ft distance criterion is utilized (12). These contaminants have been detected above the GWSLs within 30 ft of Bldg 699.

Therefore, VI at Bldg 699 was further evaluated through the collection of near-slab and sub-slab soil gas samples.

See **Table 3.13-1** for a summary of the field activities and **Figure 3.13-1** for sample locations. A summary of the analytical and sampling program, including sample IDs, collection dates, and analytical parameters, is provided in **Table 3.13-2**.

Table 3.13-1
Parcel 52 Sampling Location, Rationale and Analytical

Sample Location	Sample Media	Sample Location Rationale	Analytical Suite
52SG-1 and 2 (2 samples)	Sub-slab soil gas	Two sub-slab soil gas samples were collected from under Bldg 699 biased to the north side of the building. Because this is an active service station with active fueling stations and automotive service bays, sub-slab soil gas was sampled in lieu of indoor air in order to minimize the potential exposure of collected samples to VOs present that are likely attributable operations conducted within Bldg 699.	NJDEP – SRWM Low Level USEPA TO-15 Method
52SG-3 and 4 (2 samples)	Near-slab soil gas	Two near-slab soil gas samples were collected at Bldg 699. Groundwater flow direction is to the south, and VOs have been detected above GWSLs north of the building. Therefore, the sample locations were biased to the north side of the building.	NJDEP – SRWM Low Level USEPA TO-15 Method

3.13.4 Site Investigation Results

A total of 21 VOs were detected in soil gas samples collected in Parcel 52. No VOs were detected in near-slab soil gas samples above comparison criteria. PCE was detected above comparison criteria in both sub-slab soil gas samples at concentrations of 151 $\mu\text{g}/\text{m}^3$ in sample 52SG-1 and 241 $\mu\text{g}/\text{m}^3$ in sample 52SG-2 (**Table 3.13-3**). No constituents present in groundwater above the GWSL at Bldg 699 were detected above the Soil Gas NRS.

3.13.5 Summary and Conclusions

One VO, PCE, exceeded NJDEP Soil Gas NRSs in sub-slab soil gas at Parcel 52. The detection of PCE in soil gas is unexpected given the extensive existing groundwater data set collected to date. This site is currently being addressed under the IRP, and groundwater will continue to be monitored. Evaluation of indoor air in Bldg 699 is recommended.

**Table 3.13-2
Parcel 52 Sample and Analytical Summary**

Media	Type	Field Sample #	Sample Date	Sample Time	Begin Depth	End Depth	TPHC	VO+15	B/N+15	PCBs	TAL Metals	Cyanide	Mercury	Ammonia/ Nitrate/ Nitrite	COMMENTS/VARIANCES
SG	CANISTER	52SG-1	12/12/07	10:20	3.0	3.0		X							
SG	CANISTER	52SG-2	12/12/07	8:40	3.0	3.0		X							
SG	CANISTER	52SG-3	12/12/07	9:40	5.0	5.0		X							
SG	CANISTER	52SG-4	12/12/07	8:00	5.0	5.0		X							

X = Sample analyzed for the indicated analytical parameter suite

Table 3.13-3
Fort Monmouth ECP Site Investigation, Parcel 52
Summary of Analytical Parameters Detected Soil Gas ($\mu\text{g}/\text{m}^3$)

Chemical	Sample ID: Lab ID: Date Sampled: Depth (ft. bgs):	Analytical Results			
		52SG-1 J79249-4 12/12/07 3'	52SG-2 J79249-3 12/12/07 3'	52SG-3 J79249-2 12/12/07 5'	52SG-4 J79249-1 12/12/07 5'
Chemical	SG Non-residential ²	Result	Result	Result	Result
Volatiles					
Acetone	230,000	11	28.3	22	39.0
Benzene	26	3.5 J	8.0	3.2 J	12
Carbon disulfide	51,000	15	<0.87	10	21
Chloroform	24	5.4 J	<1.7	<1.7	4.2 J
Ethanol	NLE	10	<2.3	19.2	28.5
Ethylbenzene	74,000	4.3 J	6.9	<0.65	32
4-Ethyltoluene	NLE	<0.69	4.9 J	<0.69	30
n-Heptane	NLE	<0.98	<0.98	<0.98	9.0
Isopropyl Alcohol	NLE	<1.2	<1.2	<1.2	4.4
Methyl ethyl ketone	360,000	<0.91	<0.91	5.0	13
Methyl tertiary butyl ether (MTBE)	180	<1.3	3.5 J	4.3 J	19
Propylene	NLE	55.8	<1	62.5	54.5
Tertiary Butyl Alcohol	4,600	<1.1	<1.1	<1.1	4.9
Tetrachloroethylene	36	151	241	16	11
Toluene	360,000	15	35	7.9	76.9
1,2,4-Trimethylbenzene	NLE	15	22	15	145
1,3,5-Trimethylbenzene	NLE	<0.69	5.4 J	4.4 J	42
2,2,4-Trimethylpentane	NLE	4.5 J	78.5	14	2410
Xylenes (m&p)	NLE	21	35	15	164
o-Xylene	NLE	6.9	11	5.2 J	53.4
Xylenes (total)	7,700	28	46.0	20	217

¹ NJDEP Generic Vapor Intrusion Screening Levels, Soil Gas Screening Levels, Residential, March 2007.

² NJDEP Generic Vapor Intrusion Screening Levels, Soil Gas Screening Levels, Nonresidential, March 2007. Results were compared to these levels.

(a) = Sum of cis-1,2-Dichloroethylene and trans-1,2-Dichloroethylene.

J = Indicates an estimated value.

DUP = Duplicate Sample

NLE = No Limit Established

Bold = Analyte detected.

Shaded = Concentration exceeds SG Nonresidential.

Sample ID	Media	Depth (ft bgs)	Compound	Concentration (ug/m ³)	Criteria	Criteria Value (ug/m ³)
52SG-2	SG	3	PCE	241	SG Non-residential	36

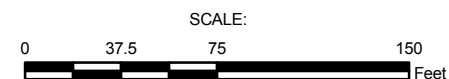
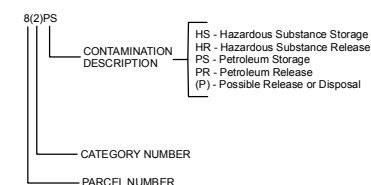
LEGEND

- * Soil-Gas Sample Location
- Generalized Groundwater Flow Direction. Direction of Generalized Groundwater Flow derived from qualitative evaluation of surface topography, surface water features, and pre-existing IRP site groundwater potentiometric maps where available.
- Building
- IRP Site Boundary
- Installation Boundary

ECP PARCEL CATEGORY DEFINITIONS

- 2 Areas where only release or disposal of petroleum products has occurred.

BRAC PARCEL LABEL DEFINITIONS



Base Realignment and Closure 2005



Shaw Shaw Environmental, Inc.



FIGURE 3.13-1
FORT MONMOUTH ECP
SITE INVESTIGATION
PARCEL 52 SAMPLE LOCATIONS
AND CONSTITUENTS OF CONCERN
MAIN POST
FORT MONMOUTH
NEW JERSEY

Sample ID	Media	Depth (ft bgs)	Compound	Concentration (ug/m ³)	Criteria	Criteria Value (ug/m ³)
52SG-1	SG	3	PCE	151	SG Non-residential	36

3.14 Parcel 57 – Former Coal Storage and Railroad Unloading – 800 Area

3.14.1 Site Description

Parcel 57 is located in the south-central portion of the MP in the area of Bldgs 1007 and 801. Historic site plans, aerial photographs, and information obtained during personnel interviews indicate a coal storage area and fuel unloading area formerly existed in the south-central portion of the MP along the former RR in the vicinity of Bldgs 1007 and 801. The potential coal storage area was identified in photographs from 1947, 1957, and 1963 (18). A geothermal well field is present north of Bldg 800. Additional information pertaining to this parcel can be found in Section 3.3, Section 5.4, Section 5.13.1, and Appendix G of the Phase I ECP (1).

3.14.2 Previous Investigations

No previous investigations have been conducted in relation to the former coal storage area.

3.14.3 Site Investigation Sampling

In order to determine the impact of historic coal and fuel unloading and storage activities in the area of the former RR, the following soil and groundwater sampling was conducted.

Geoprobe® Investigation

Soil and groundwater samples were collected in December 2007 in Parcel 57 in order to determine if any contamination exists from previous activities associated with the former coal storage area. A total of 15 surface soil samples and 18 subsurface soil samples (including three duplicate samples) were collected from 15 distinct Geoprobe® borings (**Figure 3.14-1**) on 100-ft centers. Surface soil samples for non-VO analysis were collected from the 0- to 6-inch interval bgs. For borings located in paved areas, non-VO surface soil samples were collected from the 0- to 6-inch interval directly below the pavement sub-base. Surface soil samples collected for VO analysis were collected from the 18- to 24-inch interval bgs. Subsurface soil samples were collected from the 6-inch interval directly above the water table. Field screening of the soil boring core was conducted using a PID/FID meter. No visual or olfactory evidence of soil contamination was noted.

A total of six groundwater samples (including one duplicate sample) were collected from five distinct temporary wells (**Figure 3.14.1**). Temporary wells were installed along the northern boundary of the soil boring grid in a downgradient hydrogeologic direction and were constructed of PVC and 5 to 10 ft of factory-slotted screen.

Table 3.14-1 presents a summary of all field activities, and all sample locations are provided on **Figure 3.14-1**. A summary of sampling activities, including sample IDs, collection dates, and analytical parameters, is provided in **Table 3.14-2**.

Table 3.14-1
Parcel 57 Sampling Location, Rationale and Analytical

Sample Location	Sample Media	Sample Location Rationale	Analytical Suite
57SS-A1 through 57SS-C9 (15 samples)	Surface soil	Soil samples were collected from the 0- to 6-inch bgs interval from the Geoprobe® soil boring grid (conducted on 100-ft centers) to investigate the former coal storage location. If the sample location was paved, the sample was collected from the 0- to 6-inch interval below the pavement sub-base.	TCL+30 (w/o pesticides), TAL Metals
57SB-A1 through 57SB-C9 (18 samples – includes 3 duplicate samples)	Subsurface soil	Soil samples were collected from the 6-inch interval directly above the water table (depths ranging from 3.5 to 8.0 ft bgs) from each Geoprobe® soil boring in the grid (conducted on 100-ft centers) to investigate the former coal storage location. Field screening of the entire Geoprobe® soil core was conducted using PID/FID meters.	TCL+30 (w/o pesticides), TAL Metals
57GW-A1, A3, A5, A7, A9 (6 samples – includes 1 duplicate sample)	Groundwater	Groundwater samples were collected from the specified Geoprobe® soil borings in the grid to investigate the former location of coal storage.	TCL+30 (w/o pesticides/PCBs), TAL Metals

3.14.4 Site Investigation Results

Geoprobe® Investigation Results

Surface and subsurface soil samples were analyzed for TCL+30 (without pesticides) and TAL metals. Groundwater samples were analyzed for TCL+30 (without pesticides/PCBs) and TAL metals.

Soil

As presented in **Table 3.14-3**, seven VOs, 22 B/Ns, and 19 metals were detected in Parcel 57 soil samples. All seven VOs were detected at concentrations below NJDEP NRDCSCC. Of the 17 B/Ns, four (benzo[a]anthracene, benzo[a]pyrene, benzo[b]fluoranthene, and benzo[k]fluoranthene) were detected in three surface soil samples, P57-A1-A, P57-C3-A, and P57-C5-A, at concentrations that exceeded NJDEP NRDCSCC and their respective MPBC. All 19 metals were detected at concentrations below NJDEP NRDCSCC. B/Ns are considered COCs in soil at Parcel 57.

Five soil samples contained TICs at elevated concentrations. 1,1-bis(1-methylethyl)-Hydrazine was detected at a concentration of 310 mg/kg in sample P57-A6-A and at a concentration of 330 mg/kg in the duplicate sample collected at P57-A9-C. It was not detected in sample P57-A9-C. 4-hydroxy-4-methyl 2-Pentanone was detected at concentrations of 220 mg/kg, 150 mg/kg, and 230 mg/kg in samples P57-A2-A, P57-A2-C, and P57-A4-C, respectively. Multiple semi-volatile constituents were identified in each of the five samples; however, no TCL organic constituents were identified at concentrations greater than the NRDCSCC in the five samples in which elevated TIC concentrations were identified.

Groundwater

As presented in **Table 3.14-4**, a total of five VOs (acetone, carbon disulfide, methyl ethyl ketone [2-butanone], TBA, and toluene) and one B/N (bis[2-ethylhexyl]phthalate) were detected at concentrations below the NJDEP GWQC in Parcel 57 groundwater samples.

A total of 20 metals were detected in Parcel 57 groundwater samples. Of the 20 metals detected, 11 (aluminum, arsenic, beryllium, cadmium, chromium, cobalt, iron, lead, manganese, nickel, and sodium) were detected above the respective GWQC.

Several natural and anthropogenic factors contribute to the wide range in concentrations of metals in soils, which further impact the concentration of metals in groundwater. Soils derived from glauconitic sands contain abundant aluminum, calcium, potassium, iron, magnesium, manganese, and sodium (among others), which are likely to be present at elevated concentrations in the groundwater, particularly when sediments are entrained in the collected groundwater samples. These native metals included aluminum, barium, calcium, iron, magnesium, manganese, potassium, sodium, and zinc (47). In addition, sodium concentrations can be influenced by saltwater intrusion. The non-native metals detected in groundwater samples collected from the temporary wells in Parcel 57 have been compared to the respective GWQC and MPBCs to determine COCs requiring further evaluation (**Figure 3.14-1**).

Four naturally occurring metal constituents commonly associated with the local soils/geology, aluminum, iron, manganese, and sodium were detected in Parcel 57 groundwater samples collected from temporary wells. As a result of these natural influences, aluminum, iron, manganese, and sodium are not considered COCs in groundwater.

Arsenic was detected at concentrations exceeding the NJDEP GWQC of 3 µg/L in four samples, P57-A3 (5.24 µg/L), P57-A5 (3.94 µg/L), P57-A7 (4.01 µg/L), and P57-A9 (6.73 µg/L). However, these concentrations did not exceed the MPBC of 89.3 µg/L. In addition, arsenic is associated with the native glauconitic sands (48). The elevated arsenic concentrations in the native soil in turn influence the arsenic levels in groundwater. Thus, arsenic is not considered a COC in groundwater. Beryllium was detected at concentrations exceeding the NJDEP GWQC of 1 µg/L in three samples, P57-A5 (2.12 µg/L), P57-A7 (1.98 µg/L), and P57-A9 (10.9 µg/L). Two of the three

beryllium concentrations also exceeded the MPBC of 2.1 µg/L. Cadmium was detected at a concentration exceeding the NJDEP GWQC of 4 µg/L and the MPBC of 9.5 µg/L in one sample, P57-A9 (14.3 µg/L). Chromium was detected at a concentration exceeding the NJDEP GWQC of 70 µg/L in one sample, P57-A7 (105 µg/L). The chromium concentration was below the MPBC of 191 µg/L. Cobalt was detected at a concentration exceeding the NJDEP GWQC of 100 µg/L and the MPBC of 18.3 µg/L in one sample, P57-A9 (147 µg/L). Lead was detected at a concentration exceeding the NJDEP GWQC of 5 µg/L and the MPBC of 22.7 µg/L in one sample, P57-A7 (829 µg/L). Nickel was detected at a concentration exceeding the NJDEP GWQC of 100 µg/L and the MPBC of 187 µg/L in one sample P57-A-9 (372 µg/L).

3.14.5 Summary and Conclusions

Soil samples that exceeded NJDEP NRDCSCC for B/Ns were collected from the 0- to 6-inch interval below the pavement sub-base. The four B/Ns (benzo[a]anthracene, benzo[a]pyrene, benzo[b]fluoranthene, and benzo[k]fluoranthene) that were detected at concentrations above the NRDCSCC and the MPBC are considered COCs in soil.

Five common, naturally occurring metal constituents, aluminum, arsenic, iron, manganese, and sodium, were detected at concentrations greater than the NJDEP GWQC, but these native metals are attributed to the aquifer material and are not site-related. Therefore, these metals are not considered COCs. Five non-native metal constituents, beryllium, cadmium, cobalt, lead, and nickel, were detected at concentrations above the NJDEP GWQC and their respective MPBC. These five metals are considered COCs in Parcel 57 groundwater. Further evaluation of B/Ns identified in surface soil and metals in groundwater is recommended for Parcel 57. The B/N COCs identified in soil at Parcel 57 are PAHs. PAHs are contained in asphalt and are commonly detected in soil under asphalt pavement. Re-collection of samples at locations that are currently paved and/or were paved in the past will be conducted as part of the further evaluation to determine if the PAHs detected in soil are attributable to asphalt.

**Table 3.14-2
Parcel 57 Sample and Analytical Summary**

Media	Type	Field Sample #	Sample Date	Sample Time	Begin Depth	End Depth	TPHC	VO+15	BIN+15	PCBs	TAL Metals	Cyanide	Mercury	Ammonia/ Nitrate/ Nitrite	COMMENTS/VARIANCES
BLANK	TRIP	TRIP BLANK-SO	12/08/07	-	--	--		X							
SOIL	GEOPROBE	P57-B3-A	12/08/07	9:15	0.5	1.0			X	X	X				Sample depth in field documentation was recorded from top of soil. Reported bgs depths adjusted to account for surface asphalt and sub-base.
SOIL	GEOPROBE	P57-B3-B	12/08/07	9:15	1.5	2.0		X							
SOIL	GEOPROBE	P57-B3-C	12/08/07	9:35	7.0	7.5		X	X	X	X				Sample depth in field documentation was recorded from top of soil. Reported bgs depths adjusted to account for surface asphalt and sub-base.
SOIL	GEOPROBE	P57-B4-A	12/08/07	10:30	0.5	1.0			X	X	X				Sample depth in field documentation was recorded from top of soil. Reported bgs depths adjusted to account for surface asphalt and sub-base.
SOIL	GEOPROBE	P57-B4-B	12/08/07	10:30	1.5	2.0		X							
SOIL	GEOPROBE	P57-B4-C	12/08/07	10:45	6.5	7.0		X	X	X	X				Sample depth in field documentation was recorded from top of soil. Reported bgs depths adjusted to account for surface asphalt and sub-base.
SOIL	GEOPROBE	P57-C3-A	12/08/07	12:10	0.5	1.0			X	X	X				Sample depth in field documentation was recorded from top of soil. Reported bgs depths adjusted to account for surface asphalt and sub-base.
SOIL	GEOPROBE	P57-C3-B	12/08/07	12:10	1.5	2.0		X							
SOIL	GEOPROBE	P57-C3-C	12/08/07	12:20	6.5	7.0		X	X	X	X				Sample depth in field documentation was recorded from top of soil. Reported bgs depths adjusted to account for surface asphalt and sub-base.
SOIL	GEOPROBE	P57-C3-C DUPLICATE	12/08/07	12:20	6.5	7.0		X	X	X	X				Sample depth in field documentation was recorded from top of soil. Reported bgs depths adjusted to account for surface asphalt and sub-base.
SOIL	GEOPROBE	P57-A2-A	12/08/07	12:55	0.0	0.5			X	X	X				
SOIL	GEOPROBE	P57-A2-B	12/08/07	12:55	1.5	2.0		X							
SOIL	GEOPROBE	P57-A2-C	12/08/07	13:05	5.5	6.0		X	X	X	X				
BLANK	FIELD	FIELD BLANK-SO	12/08/07	13:15	--	--		X	X	X	X				
BLANK	TRIP	TRIP BLANK	12/10/07	-	--	--		X							
SOIL	GEOPROBE	P57-C5-A	12/10/07	8:25	0.5	1.0			X	X	X				Sample depth in field documentation was recorded from top of soil. Reported bgs depths adjusted to account for surface asphalt and sub-base.

**Table 3.14-2
Parcel 57 Sample and Analytical Summary**

Media	Type	Field Sample #	Sample Date	Sample Time	Begin Depth	End Depth	TPHC	VO+15	BIN+15	PCBs	TAL Metals	Cyanide	Mercury	Ammonia/ Nitrate/ Nitrite	COMMENTS/VARIANCES
SOIL	GEOPROBE	P57-C5-B	12/10/07	8:25	1.5	2.0		X							Sample depth in field documentation was recorded from top of soil. Reported bgs depths adjusted to account for surface asphalt and sub-base.
SOIL	GEOPROBE	P57-C5-C	12/10/07	8:35	7.0	7.5		X	X	X	X				Sample depth in field documentation was recorded from top of soil. Reported bgs depths adjusted to account for surface asphalt and sub-base.
SOIL	GEOPROBE	P57-C4-A	12/10/07	9:20	0.5	1.0			X	X	X				Sample depth in field documentation was recorded from top of soil. Reported bgs depths adjusted to account for surface asphalt and sub-base.
SOIL	GEOPROBE	P57-C4-B	12/10/07	9:20	1.5	2.0		X							Sample depth in field documentation was recorded from top of soil. Reported bgs depths adjusted to account for surface asphalt and sub-base.
SOIL	GEOPROBE	P57-C4-C	12/10/07	9:30	6.5	7.0		X	X	X	X				Sample depth in field documentation was recorded from top of soil. Reported bgs depths adjusted to account for surface asphalt and sub-base.
SOIL	GEOPROBE	P57-B5-A	12/10/07	13:35	0.5	1.0			X	X	X				Sample depth in field documentation was recorded from top of soil. Reported bgs depths adjusted to account for surface asphalt and sub-base.
SOIL	GEOPROBE	P57-B5-B	12/10/07	13:35	1.5	2.0		X							Sample depth in field documentation was recorded from top of soil. Reported bgs depths adjusted to account for surface asphalt and sub-base.
SOIL	GEOPROBE	P57-B5-C	12/10/07	13:40	6.5	7.0		X	X	X	X				Sample depth in field documentation was recorded from top of soil. Reported bgs depths adjusted to account for surface asphalt and sub-base.
SOIL	GEOPROBE	P57-B5-C DUPLICATE	12/10/07	13:40	6.5	7.0		X	X	X	X				Sample depth in field documentation was recorded from top of soil. Reported bgs depths adjusted to account for surface asphalt and sub-base.
SOIL	GEOPROBE	P57-A4-A	12/10/07	14:15	0.5	1.0			X	X	X				Sample depth in field documentation was recorded from top of soil. Reported bgs depths adjusted to account for surface asphalt and sub-base.
SOIL	GEOPROBE	P57-A4-B	12/10/07	14:15	1.5	2.0		X							Sample depth in field documentation was recorded from top of soil. Reported bgs depths adjusted to account for surface asphalt and sub-base.
SOIL	GEOPROBE	P57-A4-C	12/10/07	14:25	6.5	7.0		X	X	X	X				Sample depth in field documentation was recorded from top of soil. Reported bgs depths adjusted to account for surface asphalt and sub-base.
SOIL	GEOPROBE	P57-A6-A	12/10/07	14:50	0.5	1.0			X	X	X				Sample depth in field documentation was recorded from top of soil. Reported bgs depths adjusted to account for surface asphalt and sub-base.
SOIL	GEOPROBE	P57-A6-B	12/10/07	14:50	1.5	2.0		X							Sample depth in field documentation was recorded from top of soil. Reported bgs depths adjusted to account for surface asphalt and sub-base.
SOIL	GEOPROBE	P57-A6-C	12/10/07	15:00	7.0	7.5		X	X	X	X				Sample depth in field documentation was recorded from top of soil. Reported bgs depths adjusted to account for surface asphalt and sub-base.

**Table 3.14-2
Parcel 57 Sample and Analytical Summary**

Media	Type	Field Sample #	Sample Date	Sample Time	Begin Depth	End Depth	TPHC	VO+15	BN+15	PCBs	TAL Metals	Cyanide	Mercury	Ammonia/ Nitrate/ Nitrite	COMMENTS/VARIANCES
SOIL	GEOPROBE	P57-A8-A	12/10/07	15:35	0.5	1.0			X	X	X				Sample depth in field documentation was recorded from top of soil. Reported bgs depths adjusted to account for surface asphalt and sub-base.
SOIL	GEOPROBE	P57-A8-B	12/10/07	15:35	1.5	2.0		X							
SOIL	GEOPROBE	P57-A8-C	12/10/07	15:50	6.0	6.5		X	X	X	X				Sample depth in field documentation was recorded from top of soil. Reported bgs depths adjusted to account for surface asphalt and sub-base.
BLANK	FIELD	FIELD BLANK	12/10/07	15:15	--	--		X	X	X	X				
BLANK	TRIP	TRIP BLANK-SO	12/11/07	-	--	--		X							
SOIL	GEOPROBE	P57-A1-A	12/11/07	7:50	0.5	1.0			X	X	X				Sample depth in field documentation was recorded from top of soil. Reported bgs depths adjusted to account for surface asphalt and sub-base.
SOIL	GEOPROBE	P57-A1-B	12/11/07	7:50	1.5	2.0		X							
SOIL	GEOPROBE	P57-A1-C	12/11/07	8:00	7.5	8.0		X	X	X	X				Sample depth in field documentation was recorded from top of soil. Reported bgs depths adjusted to account for surface asphalt and sub-base.
SOIL	GEOPROBE	P57-A3-A	12/11/07	8:30	0.5	1.0			X	X	X				Sample depth in field documentation was recorded from top of soil. Reported bgs depths adjusted to account for surface asphalt and sub-base.
SOIL	GEOPROBE	P57-A3-B	12/11/07	8:30	1.5	2.0		X							
SOIL	GEOPROBE	P57-A3-C	12/11/07	8:40	4.0	4.5		X	X	X	X				Sample depth in field documentation was recorded from top of soil. Reported bgs depths adjusted to account for surface asphalt and sub-base.
SOIL	GEOPROBE	P57-A5-A	12/11/07	9:25	0.5	1.0			X	X	X				Sample depth in field documentation was recorded from top of soil. Reported bgs depths adjusted to account for surface asphalt and sub-base.
SOIL	GEOPROBE	P57-A5-B	12/11/07	9:25	1.5	2.0		X							
SOIL	GEOPROBE	P57-A5-C	12/11/07	14:05	7.5	8.0		X	X	X	X				Sample depth in field documentation was recorded from top of soil. Reported bgs depths adjusted to account for surface asphalt and sub-base.
SOIL	GEOPROBE	P57-A7-A	12/11/07	11:15	0.0	0.5			X	X	X				
SOIL	GEOPROBE	P57-A7-B	12/11/07	11:15	1.5	2.0		X							
SOIL	GEOPROBE	P57-A7-C	12/11/07	11:35	5.5	6.0		X	X	X	X				

**Table 3.14-2
Parcel 57 Sample and Analytical Summary**

Media	Type	Field Sample #	Sample Date	Sample Time	Begin Depth	End Depth	TPHC	VO+15	BN+15	PCBs	TAL Metals	Cyanide	Mercury	Ammonia/ Nitrate/ Nitrite	COMMENTS/VARIANCES
SOIL	GEOPROBE	P57-A9-A	12/11/07	13:10	0.0	0.5			X	X	X				
SOIL	GEOPROBE	P57-A9-B	12/11/07	13:10	1.5	2.0		X							
SOIL	GEOPROBE	P57-A9-C	12/11/07	13:20	7.5	8.0		X	X	X	X				
SOIL	GEOPROBE	P57-A9-C DUPLICATE	12/11/07	13:20	7.5	8.0		X	X	X	X				
BLANK	FIELD	FIELD BLANK-SO	12/11/07	13:35	--	--		X	X	X	X				
BLANK	TRIP	TRIP BLANK-AQ	12/11/07	13:30	--	--		X							
BLANK	FIELD	FIELD BLANK-AQ	12/11/07	14:00	--	--		X	X		X				
GW	GEOPROBE	P57-A1	12/11/07	14:30	7.0	12.0		X	X		X				
GW	GEOPROBE	P57-A3	12/11/07	15:00	4.0	9.0		X	X		X				
GW	GEOPROBE	P57-A3 DUPLICATE	12/11/07	15:00	4.0	9.0		X	X		X				
GW	GEOPROBE	P57-A5	12/11/07	15:30	4.0	14.0		X	X		X				
GW	GEOPROBE	P57-A7	12/11/07	16:00	4.0	14.0		X	X		X				
GW	GEOPROBE	P57-A9	12/11/07	16:30	8.0	18.0		X	X		X				

X = Sample analyzed for the indicated analytical parameter suite

Table 3.14-3
Fort Monmouth Phase II Site Investigation, Parcel 57
Summary of Analytical Parameters Detected in Soil (mg/kg)

Chemical	Sample ID: Lab ID: Date Sampled: Depth (ft. bgs):		Analytical Results												
			P57-A1-A	P57-A1-B	P57-A1-C	P57-A2-A	P57-A2-B	P57-A2-C	P57-A3-A	P57-A3-B	P57-A3-C	P57-A4-A	P57-A4-B	P57-A4-C	P57-A5-A
			7052503	7052504	7052505	7051712	7051713	7052174	7052506	7052507	7052508	7052112	7052113	7052114	7052509
			12/11/2007	12/11/2007	12/11/2007	12/08/2007	12/08/2007	12/08/2007	12/11/2007	12/11/2007	12/11/2007	12/10/2007	12/10/2007	12/10/2007	12/11/2007
Chemical	NRDCSCC ²	IGWSCC ³	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
Volatiles															
Acetone	1000	100	NT	0.260 U	0.400	NT	0.240 U	0.320 U	NT	0.420	0.300	NT	0.043 J	0.450	NT
Benzene	13	1	NT	0.260 U	0.330 U	NT	0.017 J	0.320 U	NT	0.260 U	0.250 U	NT	0.330 U	0.290 U	NT
Ethylbenzene	1000	100	NT	0.260 U	0.330 U	NT	0.023 J	0.320 U	NT	0.260 U	0.250 U	NT	0.330 U	0.290 U	NT
Toluene	1000	500	NT	0.260 U	0.330 U	NT	0.077 J	0.320 U	NT	0.260 U	0.250 U	NT	0.069 J	0.290 U	NT
Trichlorofluoromethane	NLE	NLE	NT	0.260 U	0.330 U	NT	0.240 U	0.320 U	NT	0.260 U	0.250 U	NT	0.330 U	0.290 U	NT
Vinyl Acetate	NLE	NLE	NT	0.260 U	0.330 U	NT	0.240 U	0.320 U	NT	0.260 U	0.250 U	NT	0.330 U	0.290 U	NT
Xylenes (Total)	1000	67	NT	0.780 U	0.990 U	NT	0.350 J	0.950 U	NT	0.780 U	0.750 U	NT	1.000 U	0.870 U	NT
Semi-Volatiles															
Acenaphthene	10000	100	1.200	NT	1.300 U	1.200 U	NT	1.300 U	1.200 U	NT	1.100 U	1.100 U	NT	1.100 U	0.085 J
Acenaphthylene	NLE	NLE	0.760 J	NT	1.300 U	1.200 U	NT	1.300 U	1.200 U	NT	1.100 U	0.077 J	NT	1.100 U	0.061 J
Anthracene	10000	100	5.600	NT	1.300 U	0.055 J	NT	1.300 U	1.200 U	NT	1.100 U	0.160 J	NT	1.100 U	0.180 J
Benzo[a]anthracene	4	500	9.500 JD	NT	1.300 U	0.220 J	NT	1.300 U	0.100 J	NT	1.100 U	0.310 J	NT	1.100 U	0.340 J
Benzo[a]pyrene	0.66	100	9.900	NT	1.300 U	0.210 J	NT	1.300 U	1.200 U	NT	1.100 U	0.350 J	NT	1.100 U	1.100 U
Benzo[b]fluoranthene	4	50	9.900 JD	NT	1.300 U	0.330 J	NT	1.300 U	1.200 U	NT	1.100 U	0.470 J	NT	1.100 U	0.520 J
Benzo[g,h,i]perylene	NLE	NLE	3.400	NT	1.300 U	1.200 U	NT	1.300 U	1.200 U	NT	1.100 U	1.100 U	NT	1.100 U	1.100 U
Benzo[k]fluoranthene	4	500	7.000	NT	1.300 U	0.110 J	NT	1.300 U	1.200 U	NT	1.100 U	0.160 J	NT	1.100 U	0.210 J
bis(2-Ethylhexyl)phthalate	210	100	1.100 U	NT	0.080 J	0.099 J	NT	0.052 J	1.200 U	NT	0.086 J	0.150 J	NT	1.100 U	3.200
Butyl benzyl phthalate	10000	100	1.100 U	NT	1.300 U	1.200 U	NT	1.300 U	1.200 U	NT	1.100 U	1.100 U	NT	1.100 U	1.100 U
Chrysene	40	500	10.000 JD	NT	1.300 U	0.270 J	NT	1.300 U	0.130 J	NT	1.100 U	0.390 J	NT	1.100 U	0.430 J
Dibenzofuran	NLE	NLE	1.800	NT	1.300 U	1.200 U	NT	1.300 U	1.200 U	NT	1.100 U	0.032 J	NT	1.100 U	0.061 J
Diethyl phthalate	10000	50	1.100 U	NT	0.059 JB	1.200 U	NT	1.300 U	1.200 U	NT	0.053 JB	0.160 JB	NT	1.100 U	1.100 U
Di-n-butylphthalate	10000	100	0.210 J	NT	0.990 J	2.700 B	NT	1.800 B	0.820 J	NT	1.500	0.490 JB	NT	1.400 B	1.300
Di-n-octyl phthalate	10000	100	1.100 U	NT	1.300 U	1.200 U	NT	1.300 U	1.200 U	NT	1.100 U	1.100 U	NT	1.100 U	1.100 U
Fluoranthene	10000	100	25.000 D	NT	0.058 J	0.420 J	NT	1.300 U	0.280 J	NT	1.100 U	0.680 J	NT	1.100 U	0.900 J
Fluorene	10000	100	2.200	NT	1.300 U	1.200 U	NT	1.300 U	1.200 U	NT	1.100 U	1.100 U	NT	1.100 U	1.100 U
Indeno[1,2,3-cd]pyrene	4	500	3.200	NT	1.300 U	0.082 J	NT	1.300 U	1.200 U	NT	1.100 U	1.100 U	NT	1.100 U	1.100 U
2-Methylnaphthalene	NLE	NLE	1.400	NT	1.300 U	0.075 J	NT	1.300 U	1.200 U	NT	1.100 U	1.100 U	NT	1.100 U	1.100 U
Naphthalene	4200	100	0.880 J	NT	1.300 U	0.051 J	NT	1.300 U	1.200 U	NT	1.100 U	1.100 U	NT	1.100 U	1.100 U
Phenanthrene	NLE	NLE	19.000 D	NT	1.300 U	0.200 J	NT	1.300 U	0.140 J	NT	1.100 U	0.510 J	NT	0.041 J	0.660 J
Pyrene	10000	100	22.000 D	NT	0.050 J	0.410 J	NT	1.300 U	0.300 J	NT	1.100 U	0.820 J	NT	0.034 J	1.100 J
Metals															
Aluminum	NLE	NLE	7800 B	NT	16500 B	14500 B	NT	35200 B	21700 B	NT	6490 B	14400 B	NT	11500 B	11000 B
Arsenic	20	NLE	17.8	NT	9.11	7.39	NT	11.4	12.4	NT	2.73	6.16	NT	8.12	6.05
Barium	47000	NLE	35.3 B	NT	12.2 B	49.3 B	NT	148 B	50.1 B	NT	11.3 B	42.8 B	NT	17.2 B	49.1 B
Beryllium	140	NLE	0.769	NT	0.926	0.882	NT	1.54	1.35	NT	0.271	0.527	NT	1.61	0.520
Cadmium	100	NLE	0.325	NT	0.221	0.384	NT	0.311	0.426	NT	0.112	0.468	NT	0.497	0.425
Calcium	NLE	NLE	2180 B	NT	216 B	3190 B	NT	468 B	18800 B	NT	466 B	29000 B	NT	778 B	45400 B
Chromium (Total)	NLE	NLE	58.8 B	NT	106 B	53.5 B	NT	217 B	110 B	NT	22.8 B	40.9 B	NT	122 B	31.3 B
Cobalt	NLE	NLE	1.98	NT	0.526	3.48	NT	0.832	1.79	NT	0.338 U	8.52	NT	1.30	4.80
Copper	45000	NLE	28.6 B	NT	9.40 B	17.6 B	NT	26.4 B	12.8 B	NT	3.57 B	33.1 B	NT	7.01 B	25.3 B
Iron	NLE	NLE	27900 B	NT	22800 B	24500 B	NT	35100 B	34600 B	NT	8110 B	21600 B	NT	44000 B	19700 B
Lead	800	NLE	15.9	NT	0.525	22.8	NT	3.88	11.2	NT	3.01	21.0	NT	0.351 U	29.3
Magnesium	NLE	NLE	3240 B	NT	4000 B	3790 B	NT	5900 B	5000 B	NT	832 B	5240 B	NT	5250 B	4970 B
Manganese	NLE	NLE	57.7 B	NT	42.2 B	303 B	NT	54.8 B	85.9 B	NT	19.7 B	174 B	NT	27.9 B	154 B
Mercury	270	NLE	0.100 U	NT	0.119 U	0.110 U	NT	0.122 U	0.116 U	NT	0.099 U	0.105 U	NT	0.109 U	0.113 U
Nickel (Soluble Salts)	2400	NLE	7.56	NT	4.39	10.4	NT	50.3	14.6	NT	2.76	17.6	NT	44.1	11.5
Potassium	NLE	NLE	5200 B	NT	5190 B	4290 B	NT	9540 B	7720 B	NT	1430 B	3420 B	NT	11800 B	2360 B
Sodium	NLE	NLE	42.5	NT	41.667 U	38.480 U	NT	43.926 U	42.214 U	NT	38.483 U	904	NT	37.586 U	434
Vanadium	7100	NLE	45.7	NT	60.5	49.9	NT	86.1	77.6	NT	18.1	60.4	NT	70.2	43.3
Zinc	1500	NLE	39.1	NT	46.9	61.7	NT	72.6	70.2	NT	36.5	65.0	NT	165	74.4

¹ NJDEP Residential Direct Contact Soil Cleanup Criteria per NJAC 7:26D, 1999. Beryllium, Copper and Lead criteria per NJAC 7:26D, 2008.

² NJDEP Non-Residential Direct Contact Soil Cleanup Criteria per NJAC 7:26D, 1999. Beryllium, Copper and Lead criteria per NJAC 7:26D, 2008.

³ NJDEP Impact to Groundwater Soil Cleanup Criteria per NJAC 7:26D, 1999.

DUP = Duplicate Sample.

ft. bgs = Feet below ground surface.

B = The compound was found in the associated method blank as well as in the sample.

D = Sample was diluted.

E = The compound's concentration exceeds the calibration range of the instrument for that specific analysis.

J = Mass spec and retention time data indicate the presence of a compound however the result is less than the MDL but greater than zero.

U = The compound was analyzed for but not detected.

NT = Not tested.

NLE = No limit established.

mg/kg = milligram per kilogram.

Bold = Analyte was detected.

Shaded = Concentration exceeds level of concern.
(Surface soil compared to NRDCSCC. Subsurface soil compared to IGWSCC when available, otherwise compared to NRDCSCC).

Table 3.14-3
Fort Monmouth Phase II Site Investigation, Parcel 57
Summary of Analytical Parameters Detected in Soil (mg/kg)

Chemical	Sample ID: Lab ID: Date Sampled: Depth (ft. bgs):		Analytical Results												
			P57-A5-B	P57-A5-C	P57-A6-A	P57-A6-B	P57-A6-C	P57-A7-A	P57-A7-B	P57-A7-C	P57-A8-A	P57-A8-B	P57-A8-C	P57-A9-A	P57-A9-B
			7052510	7052511	7052115	7052116	7052117	7052512	7052513	7052514	7052118	7052119	7052120	7052515	7052516
			12/11/2007	12/11/2007	12/10/2007	12/10/2007	12/10/2007	12/11/2007	12/11/2007	12/11/2007	12/10/2007	12/10/2007	12/10/2007	12/11/2007	12/11/2007
NRDCSCC ²	IGWSCC ³	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	
Volatiles															
Acetone	1000	100	0.340	0.420	NT	0.400	0.380	NT	0.610	0.340	NT	0.390	0.560	NT	0.510
Benzene	13	1	0.250 U	0.280 U	NT	0.270 U	0.260 U	NT	0.270 U	0.280 U	NT	0.260 U	0.270 U	NT	0.260 U
Ethylbenzene	1000	100	0.250 U	0.280 U	NT	0.270 U	0.260 U	NT	0.270 U	0.280 U	NT	0.260 U	0.270 U	NT	0.260 U
Toluene	1000	500	0.250 U	0.280 U	NT	0.270 U	0.260 U	NT	0.270 U	0.024 J	NT	0.260 U	0.270 U	NT	0.260 U
Trichlorofluoromethane	NLE	NLE	0.069 J	0.280 U	NT	0.270 U	0.260 U	NT	0.270 U	0.280 U	NT	0.260 U	0.270 U	NT	0.260 U
Vinyl Acetate	NLE	NLE	0.250 U	0.280 U	NT	0.270 U	0.260 U	NT	0.270 U	0.280 U	NT	0.210 J	0.270 U	NT	0.260 U
Xylenes (Total)	1000	67	0.760 U	0.840 U	NT	0.810 U	0.780 U	NT	0.820 U	0.021 J	NT	0.770 U	0.810 U	NT	0.790 U
Semi-Volatiles															
Acenaphthene	10000	100	NT	1.200 U	0.070 J	NT	1.100 U	1.100 U	NT	1.100 U	4.400 U	NT	1.100 U	1.200 U	NT
Acenaphthylene	NLE	NLE	NT	1.200 U	0.059 J	NT	1.100 U	1.100 U	NT	0.069 J	0.170 J	NT	1.100 U	1.200 U	NT
Anthracene	10000	100	NT	1.200 U	0.150 J	NT	0.030 J	0.058 J	NT	0.039 J	0.520 J	NT	1.100 U	1.200 U	NT
Benzo[a]anthracene	4	500	NT	1.200 U	0.350 J	NT	0.054 J	0.240 J	NT	0.100 J	1.100 J	NT	1.100 U	0.089 J	NT
Benzo[a]pyrene	0.66	100	NT	1.200 U	1.100 U	NT	1.100 U	0.240 J	NT	0.088 J	4.400 U	NT	1.100 U	0.080 J	NT
Benzo[b]fluoranthene	4	50	NT	1.200 U	1.100 U	NT	0.069 J	0.430 J	NT	0.072 J	4.400 U	NT	1.100 U	0.130 J	NT
Benzo[g,h,i]perylene	NLE	NLE	NT	1.200 U	1.100 U	NT	1.100 U	1.100 U	NT	1.100 U	4.400 U	NT	1.100 U	1.200 U	NT
Benzo[k]fluoranthene	4	500	NT	1.200 U	1.100 U	NT	0.039 J	0.100 J	NT	0.077 J	4.400 U	NT	1.100 U	1.200 U	NT
bis(2-Ethylhexyl)phthalate	210	100	NT	0.067 J	1.100 U	NT	0.044 J	1.900	NT	0.730 J	1.200 J	NT	0.110 J	0.180 J	NT
Butyl benzyl phthalate	10000	100	NT	1.200 U	1.100 U	NT	1.100 U	1.100 U	NT	1.100 U	4.400 U	NT	1.100 U	1.200 U	NT
Chrysene	40	500	NT	1.200 U	0.470 J	NT	0.077 J	0.320 J	NT	0.140 J	1.500 J	NT	1.100 U	0.120 J	NT
Dibenzofuran	NLE	NLE	NT	1.200 U	1.100 U	NT	1.100 U	1.100 U	NT	1.100 U	0.170 J	NT	1.100 U	1.200 U	NT
Diethyl phthalate	10000	50	NT	1.200 U	0.080 JB	NT	1.100 U	0.065 JB	NT	0.054 JB	0.250 JB	NT	1.100 U	0.046 JB	NT
Di-n-butylphthalate	10000	100	NT	0.300 J	1.100 JB	NT	0.380 JB	1.500	NT	0.810 J	2.300 JB	NT	3.800 B	0.340 J	NT
Di-n-octyl phthalate	10000	100	NT	1.200 U	1.100 U	NT	1.100 U	1.100 U	NT	1.100 U	4.400 U	NT	0.035 JB	1.200 U	NT
Fluoranthene	10000	100	NT	0.077 J	0.850 J	NT	0.130 J	0.580 J	NT	0.140 J	2.400 J	NT	0.055 J	0.170 J	NT
Fluorene	10000	100	NT	1.200 U	0.073 J	NT	1.100 U	1.100 U	NT	1.100 U	0.280 J	NT	1.100 U	1.200 U	NT
Indeno[1,2,3-cd]pyrene	4	500	NT	1.200 U	1.100 U	NT	1.100 U	1.100 U	NT	1.100 U	4.400 U	NT	1.100 U	1.200 U	NT
2-Methylnaphthalene	NLE	NLE	NT	1.200 U	0.091 J	NT	1.100 U	1.100 U	NT	1.100 U	4.400 U	NT	1.100 U	1.200 U	NT
Naphthalene	4200	100	NT	1.200 U	0.043 J	NT	1.100 U	1.100 U	NT	1.100 U	0.160 J	NT	1.100 U	1.200 U	NT
Phenanthrene	NLE	NLE	NT	0.057 J	0.670 J	NT	0.100 J	0.270 J	NT	0.050 J	2.100 J	NT	0.031 J	0.100 J	NT
Pyrene	10000	100	NT	0.074 J	1.300	NT	0.150 J	0.550 J	NT	0.210 J	4.000 J	NT	0.051 J	0.200 J	NT
Metals															
Aluminum	NLE	NLE	NT	11000 B	10600 B	NT	14300 B	10300 B	NT	6810 B	7970 B	NT	6370 B	12500 B	NT
Arsenic	20	NLE	NT	6.04	4.58	NT	13.2	8.01	NT	4.58	2.84	NT	8.05	10.3	NT
Barium	47000	NLE	NT	45.9 B	35.5 B	NT	38.6 B	34.5 B	NT	14.6 B	19.0 B	NT	5.38 B	36.2 B	NT
Beryllium	140	NLE	NT	1.02	0.346	NT	1.23	0.529	NT	0.524	0.259	NT	0.556	0.933	NT
Cadmium	100	NLE	NT	0.203	0.435	NT	0.359	0.329	NT	0.185	0.247	NT	0.0843	0.306	NT
Calcium	NLE	NLE	NT	1140 B	25000 B	NT	2040 B	9430 B	NT	762 B	14300 B	NT	439 B	1720 B	NT
Chromium	NLE	NLE	NT	61.5 B	22.9 B	NT	108 B	33.3 B	NT	41.0 B	17.1 B	NT	72.2 B	58.9 B	NT
Cobalt	NLE	NLE	NT	0.347 U	5.53	NT	1.70	1.32	NT	0.876	6.60	NT	0.337 U	1.42	NT
Copper	45000	NLE	NT	3.02 B	26.8 B	NT	11.1 B	13.0 B	NT	7.19 B	33.3 B	NT	2.90 B	16.2 B	NT
Iron	NLE	NLE	NT	23100 B	16500 B	NT	33200 B	17800 B	NT	15600 B	14300 B	NT	14100 B	27200 B	NT
Lead	800	NLE	NT	3.05	15.7	NT	7.57	29.5	NT	7.00	9.78	NT	1.65	28.9	NT
Magnesium	NLE	NLE	NT	2670 B	3790 B	NT	4330 B	2280 B	NT	1780 B	3720 B	NT	1180 B	2850 B	NT
Manganese	NLE	NLE	NT	97.6 B	118 B	NT	73.1 B	95.7 B	NT	55.9 B	140 B	NT	9.25 B	110 B	NT
Mercury	270	NLE	NT	0.101 U	0.099 U	NT	0.108 U	0.106 U	NT	0.101 U	0.104 U	NT	0.109 U	0.109 U	NT
Nickel	2400	NLE	NT	5.57	20.0	NT	10.3	6.45	NT	4.43	14.5	NT	2.27	6.97	NT
Potassium	NLE	NLE	NT	4170 B	1920 B	NT	7580 B	1970 B	NT	3110 B	1010 B	NT	2750 B	5150 B	NT
Sodium	NLE	NLE	NT	39.424 U	539	NT	41.362 U	36.479 U	NT	38.989 U	429	NT	38.358 U	38.584 U	NT
Vanadium	7100	NLE	NT	40.9	46.8	NT	63.9	37.5	NT	29.7	70.6	NT	40.6	47.0	NT
Zinc	1500	NLE	NT	80.4	70.4	NT	58.2	76.4	NT	35.8	50.4	NT	14.4	57.8	NT

¹ NJDEP Residential Direct Contact Soil Cleanup Criteria per NJAC 7:26D, 1999. Beryllium, Copper and Lead criteria per NJAC 7:26D, 2008.

² NJDEP Non-Residential Direct Contact Soil Cleanup Criteria per NJAC 7:26D, 1999. Beryllium, Copper and Lead criteria per NJAC 7:26D, 2008.

³ NJDEP Impact to Groundwater Soil Cleanup Criteria per NJAC 7:26D, 1999.

DUP = Duplicate Sample.

ft. bgs = Feet below ground surface.

B = The compound was found in the associated method blank as well as in the sample.

D = Sample was diluted.

E = The compound's concentration exceeds the calibration range of the instrument for that specific analysis.

J = Mass spec and retention time data indicate the presence of a compound however the result is less than the MDL but greater than zero.

U = The compound was analyzed for but not detected.

NT = Not tested.

NLE = No limit established.

mg/kg = milligram per kilogram.

Bold = Analyte was detected.

Shaded = Concentration exceeds level of concern.

(Surface soil compared to NRDCSCC. Subsurface soil compared to IGWSCC when available, otherwise compared to NRDCSCC).

Table 3.14-3
Fort Monmouth Phase II Site Investigation, Parcel 57
Summary of Analytical Parameters Detected in Soil (mg/kg)

Chemical			Analytical Results												
			P57-A9-C	P57-A9-C DUP	P57-B3-A	P57-B3-B	P57-B3-C	P57-B4-A	P57-B4-B	P57-B4-C	P57-B5-A	P57-B5-B	P57-B5-C	P57-B5-C DUP	P57-C3-A
			7052517	7052502	7051703	7051704	7051705	7051706	7051707	7051708	7052109	7052110	7052111	7052102	7051709
			Date Sampled: 12/11/2007	12/11/2007	12/08/2007	12/08/2007	12/08/2007	12/08/2007	12/08/2007	12/08/2007	12/10/2007	12/10/2007	12/10/2007	12/10/2007	12/08/2007
	Depth (ft. bgs):		7.5-8.0	7.5-8.0	0.5-1.0	1.5-2.0	7.0-7.5	0.5-1.0	1.5-2.0	6.5-7.0	0.5-1.0	1.5-2.0	6.5-7.0	6.5-7.0	0.5-1.0
	NRDCSCC ²	IGWSCC ³	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
Volatiles															
Acetone	1000	100	0.490	0.730	NT	0.260 U	0.330 U	NT	0.260 U	0.280 U	NT	0.270 U	0.350 U	0.280 J	NT
Benzene	13	1	0.250 U	0.290 U	NT	0.260 U	0.330 U	NT	0.260 U	0.280 U	NT	0.270 U	0.350 U	0.300 U	NT
Ethylbenzene	1000	100	0.250 U	0.290 U	NT	0.260 U	0.330 U	NT	0.260 U	0.280 U	NT	0.270 U	0.350 U	0.300 U	NT
Toluene	1000	500	0.250 U	0.290 U	NT	0.260 U	0.330 U	NT	0.260 U	0.280 U	NT	0.270 U	0.350 U	0.300 U	NT
Trichlorofluoromethane	NLE	NLE	0.250 U	0.290 U	NT	0.260 U	0.330 U	NT	0.260 U	0.280 U	NT	0.270 U	0.350 U	0.300 U	NT
Vinyl Acetate	NLE	NLE	0.250 U	0.240 J	NT	0.260 U	0.330 U	NT	0.260 U	0.280 U	NT	0.270 U	0.350 U	0.300 U	NT
Xylenes (Total)	1000	67	0.750 U	0.870 U	NT	0.790 U	0.980 U	NT	0.790 U	0.840 U	NT	0.810 U	1.060 U	0.900 U	NT
Semi-Volatiles															
Acenaphthene	10000	100	1.100 U	1.200 U	1.100 U	NT	1.200 U	0.041 J	NT	1.100 U	0.066 J	NT	1.200 U	1.200 U	0.540 J
Acenaphthylene	NLE	NLE	1.100 U	1.200 U	1.100 U	NT	1.200 U	0.071 J	NT	1.100 U	0.039 J	NT	1.200 U	1.200 U	0.097 J
Anthracene	10000	100	1.100 U	0.110 J	0.049 J	NT	1.200 U	0.200 J	NT	1.100 U	0.200 J	NT	1.200 U	1.200 U	1.200
Benzo[a]anthracene	4	500	1.100 U	0.230 J	0.210 J	NT	1.200 U	0.600 J	NT	1.100 U	0.460 J	NT	1.200 U	1.200 U	2.900
Benzo[a]pyrene	0.66	100	1.100 U	0.150 J	1.100 U	NT	1.200 U	0.480 J	NT	1.100 U	1.100 U	NT	1.200 U	1.200 U	2.000
Benzo[b]fluoranthene	4	50	1.100 U	0.220 J	1.100 U	NT	1.200 U	0.790 J	NT	1.100 U	0.520 J	NT	1.200 U	1.200 U	3.100
Benzo[g,h,i]perylene	NLE	NLE	1.100 U	0.100 J	1.100 U	NT	1.200 U	1.100 U	NT	1.100 U	1.100 U	NT	1.200 U	1.200 U	0.730 J
Benzo[k]fluoranthene	4	500	1.100 U	0.093 J	1.100 U	NT	1.200 U	0.360 J	NT	1.100 U	0.350 J	NT	1.200 U	1.200 U	1.900
bis(2-Ethylhexyl)phthalate	210	100	0.100 J	0.062 J	0.150 J	NT	1.200 U	0.130 J	NT	1.100 U	0.300 J	NT	1.200 U	0.087 J	0.220 J
Butyl benzyl phthalate	10000	100	1.100 U	1.200 U	1.100 U	NT	1.200 U	1.100 U	NT	1.100 U	0.130 J	NT	1.200 U	1.200 U	1.100 U
Chrysene	40	500	1.100 U	0.250 J	0.250 J	NT	1.200 U	0.690 J	NT	1.100 U	0.510 J	NT	1.200 U	1.200 U	3.000
Dibenzofuran	NLE	NLE	1.100 U	1.200 U	1.100 U	NT	1.200 U	0.064 J	NT	1.100 U	0.057 J	NT	1.200 U	1.200 U	0.260 J
Diethyl phthalate	10000	50	1.100 U	0.048 JB	0.043 JB	NT	1.200 U	1.100 U	NT	1.100 U	1.100 U	NT	1.200 U	0.034 JB	1.100 U
Di-n-butylphthalate	10000	100	1.100 J	1.000 J	1.600 B	NT	0.630 JB	1.700 B	NT	0.610 JB	0.760 JB	NT	0.910 JB	2.700 B	2.000 B
Di-n-octyl phthalate	10000	100	1.100 U	1.200 U	1.100 U	NT	1.200 U	1.100 U	NT	1.100 U	0.380 JB	NT	1.200 U	0.060 JB	1.100 U
Fluoranthene	10000	100	1.100 U	0.680 J	0.320 J	NT	1.200 U	1.400	NT	1.100 U	0.990 J	NT	1.200 U	1.200 U	7.500
Fluorene	10000	100	1.100 U	1.200 U	1.100 U	NT	1.200 U	0.038 J	NT	1.100 U	1.100 U	NT	1.200 U	1.200 U	0.380 J
Indeno[1,2,3-cd]pyrene	4	500	1.100 U	1.200 U	1.100 U	NT	1.200 U	0.150 J	NT	1.100 U	1.100 U	NT	1.200 U	1.200 U	0.690 J
2-Methylnaphthalene	NLE	NLE	1.100 U	1.200 U	1.100 U	NT	1.200 U	0.080 J	NT	1.100 U	1.100 U	NT	1.200 U	1.200 U	0.075 J
Naphthalene	4200	100	1.100 U	1.200 U	1.100 U	NT	1.200 U	0.065 J	NT	1.100 U	1.100 U	NT	1.200 U	1.200 U	0.120 J
Phenanthrene	NLE	NLE	1.100 U	0.510 J	0.180 J	NT	1.200 U	0.750 J	NT	1.100 U	1.000 J	NT	1.200 U	1.200 U	4.700
Pyrene	10000	100	1.100 U	0.580 J	0.500 J	NT	1.200 U	1.600	NT	1.100 U	1.600	NT	1.200 U	1.200 U	9.400
Metals															
Aluminum	NLE	NLE	5540 B	5180 B	8850 B	NT	18800 B	10600 B	NT	8020 B	9520 B	NT	19400 B	20300 B	10400 B
Arsenic	20	NLE	2.42	1.70	7.58	NT	11.0	5.89	NT	6.21	5.03	NT	7.71	9.35	2.36
Barium	47000	NLE	19.9 B	17.0 B	20.6 B	NT	33.8 B	43.6 B	NT	39.3 B	32.9 B	NT	30.5 B	32.0 B	20.9 B
Beryllium	140	NLE	0.462	0.475	1.25	NT	0.917	0.517	NT	0.516	0.540	NT	1.06	1.18	0.494
Cadmium	100	NLE	0.135	0.126	0.193	NT	0.261	0.318	NT	0.414	0.289	NT	0.317	0.534	0.163
Calcium	NLE	NLE	677 B	605 B	18300 B	NT	467 B	42600 B	NT	34300 B	34400 B	NT	607 B	598 B	292 B
Chromium	NLE	NLE	28.0 B	28.3 B	92.2 B	NT	63.6 B	39.9 B	NT	35.6 B	58.4 B	NT	127 B	135 B	46.4 B
Cobalt	NLE	NLE	0.332 U	0.333 U	1.94	NT	2.47	2.82	NT	2.93	5.07	NT	1.64	1.58	0.756
Copper	45000	NLE	2.91 B	4.17 B	8.00 B	NT	12.2 B	14.4 B	NT	29.9 B	21.0 B	NT	5.56 B	6.99 B	4.84 B
Iron	NLE	NLE	13300 B	13300 B	36000 B	NT	15300 B	15800 B	NT	17400 B	18500 B	NT	37400 B	47400 B	8230 B
Lead	800	NLE	40.7	38.0	7.69	NT	7.04	20.3	NT	51.4	15.0	NT	3.03	2.82	4.81
Magnesium	NLE	NLE	1380 B	1460 B	4560 B	NT	2600 B	3970 B	NT	4980 B	4530 B	NT	5090 B	5330 B	1500 B
Manganese	NLE	NLE	36.2 B	26.9 B	58.4 B	NT	67.6 B	120 B	NT	118 B	102 B	NT	55.2 B	54.6 B	34.8 B
Mercury	270	NLE	0.106 U	0.114 U	0.110 U	NT	0.116 U	0.102 U	NT	0.102 U	0.107 U	NT	0.114 U	0.110 U	0.160
Nickel	2400	NLE	2.35	2.49	6.29	NT	11.0	8.92	NT	8.99	9.44	NT	8.71	8.98	5.59
Potassium	NLE	NLE	2500 B	2640 B	8710 B	NT	2780 B	2710 B	NT	2560 B	3170 B	NT	8330 B	8900 B	1940 B
Sodium	NLE	NLE	37.822 U	37.867 U	37.752 U	NT	43.828 U	36.969 U	NT	39.984 U	48.6	NT	42.72 U	39.581 U	40.694 U
Vanadium	7100	NLE	19.4	18.2	51.2	NT	62.7	40.8	NT	40.0	59.1	NT	85.3	91.4	30.9
Zinc	1500	NLE	29.4	28.8	72.5	NT	57.9	50.5	NT	84.8	46.2	NT	62.6	67.0	25.2

¹ NJDEP Residential Direct Contact Soil Cleanup Criteria per NJAC 7:26D, 1999. Beryllium, Copper and Lead criteria per NJAC 7:26D, 2008.

² NJDEP Non-Residential Direct Contact Soil Cleanup Criteria per NJAC 7:26D, 1999. Beryllium, Copper and Lead criteria per NJAC 7:26D, 2008.

³ NJDEP Impact to Groundwater Soil Cleanup Criteria per NJAC 7:26D, 1999.

DUP = Duplicate Sample.

ft. bgs = Feet below ground surface.

B = The compound was found in the associated method blank as well as in the sample.

D = Sample was diluted.

E = The compound's concentration exceeds the calibration range of the instrument for that specific analysis.

J = Mass spec and retention time data indicate the presence of a compound however the result is less than the MDL but greater than zero.

U = The compound was analyzed for but not detected.

NT = Not tested.

NLE = No limit established.

mg/kg = milligram per kilogram.

Bold = Analyte was detected.

Shaded = Concentration exceeds level of concern.
(Surface soil compared to NRDCSCC. Subsurface soil compared to IGWSCC when available, otherwise compared to NRDCSCC).

Table 3.14-3
Fort Monmouth Phase II Site Investigation, Parcel 57
Summary of Analytical Parameters Detected in Soil (mg/kg)

Chemical	Sample ID: Lab ID: Date Sampled: Depth (ft. bgs):		Analytical Results								
			P57-C3-B	P57-C3-C	P57-C3-C DUP	P57-C4-A	P57-C4-B	P57-C4-C	P57-C5-A	P57-C5-B	P57-C5-C
			7051710	7051711	7051702	7052106	7052107	7052108	7052103	7052104	7052105
			12/08/2007	12/08/2007	12/08/2007	12/10/2007	12/10/2007	12/10/2007	12/10/2007	12/10/2007	12/10/2007
Depth (ft. bgs):	1.5-2.0	6.5-7.0	6.5-7.0	0.5-1.0	1.5-2.0	6.5-7.0	0.5-1.0	1.5-2.0	7.0-7.5		
Chemical	NRDCSCC ²	IGWSCC ³	Result	Result	Result	Result	Result	Result	Result	Result	Result
Volatiles											
Acetone	1000	100	0.270 U	0.260 U	0.260 U	NT	0.310 U	0.270 U	NT	0.280 J	0.320 U
Benzene	13	1	0.270 U	0.260 U	0.260 U	NT	0.310 U	0.270 U	NT	0.300 U	0.320 U
Ethylbenzene	1000	100	0.011 J	0.260 U	0.260 U	NT	0.310 U	0.270 U	NT	0.300 U	0.320 U
Toluene	1000	500	0.270 U	0.260 U	0.260 U	NT	0.310 U	0.270 U	NT	0.300 U	0.320 U
Trichlorofluoromethane	NLE	NLE	0.270 U	0.260 U	0.260 U	NT	0.310 U	0.270 U	NT	0.300 U	0.320 U
Vinyl Acetate	NLE	NLE	0.270 U	0.260 U	0.260 U	NT	0.310 U	0.270 U	NT	0.300 U	0.320 U
Xylenes (Total)	1000	67	0.810 U	0.780 U	0.780 U	NT	0.920 U	0.810 U	NT	0.990 U	0.960 U
Semi-Volatiles											
Acenaphthene	10000	100	NT	1.100 U	1.100 U	1.000 U	NT	1.100 U	0.078 J	NT	1.100 U
Acenaphthylene	NLE	NLE	NT	1.100 U	1.100 U	0.190 J	NT	1.100 U	0.100 J	NT	1.100 U
Anthracene	10000	100	NT	1.100 U	1.100 U	0.130 J	NT	1.100 U	0.430 J	NT	1.100 U
Benzo[a]anthracene	4	500	NT	0.100 J	1.100 U	0.420 J	NT	1.100 U	1.200	NT	1.100 U
Benzo[a]pyrene	0.66	100	NT	0.081 J	1.100 U	0.470 J	NT	1.100 U	0.950 J	NT	1.100 U
Benzo[b]fluoranthene	4	50	NT	0.110 J	1.100 U	0.650 J	NT	1.100 U	1.500	NT	1.100 U
Benzo[g,h,i]perylene	NLE	NLE	NT	1.100 U	1.100 U	1.000 U	NT	1.100 U	1.100 U	NT	1.100 U
Benzo[k]fluoranthene	4	500	NT	0.059 J	1.100 U	0.290 J	NT	1.100 U	0.480 J	NT	1.100 U
bis(2-Ethylhexyl)phthalate	210	100	NT	0.092 J	0.090 J	0.200 J	NT	1.100 U	1.100	NT	1.100 U
Butyl benzyl phthalate	10000	100	NT	1.100 U	1.100 U	1.000 U	NT	1.100 U	1.100 U	NT	1.100 U
Chrysene	40	500	NT	0.120 J	1.100 U	0.520 J	NT	1.100 U	1.300	NT	1.100 U
Dibenzofuran	NLE	NLE	NT	1.100 U	1.100 U	1.000 U	NT	1.100 U	0.058 J	NT	1.100 U
Diethyl phthalate	10000	50	NT	1.100 U	1.100 U	1.000 U	NT	1.100 U	1.100 U	NT	1.100 U
Di-n-butylphthalate	10000	100	NT	2.400 B	0.410 JB	0.770 JB	NT	0.570 JB	0.640 JB	NT	0.580 JB
Di-n-octyl phthalate	10000	100	NT	1.100 U	1.100 U	1.000 U	NT	1.100 U	1.100 U	NT	1.100 U
Fluoranthene	10000	100	NT	0.120 J	0.041 J	0.640 J	NT	1.100 U	2.600	NT	1.100 U
Fluorene	10000	100	NT	1.100 U	1.100 U	1.000 U	NT	1.100 U	0.110 J	NT	1.100 U
Indeno[1,2,3-cd]pyrene	4	500	NT	1.100 U	1.100 U	1.000 U	NT	1.100 U	0.330 J	NT	1.100 U
2-Methylnaphthalene	NLE	NLE	NT	1.100 U	1.100 U	1.000 U	NT	1.100 U	1.100 U	NT	1.100 U
Naphthalene	4200	100	NT	1.100 U	1.100 U	1.000 U	NT	1.100 U	1.100 U	NT	1.100 U
Phenanthrene	NLE	NLE	NT	0.033 J	1.100 U	0.260 J	NT	1.100 U	1.400	NT	1.100 U
Pyrene	10000	100	NT	0.160 J	0.041 J	1.200	NT	1.100 U	3.600	NT	1.100 U
Metals											
Aluminum	NLE	NLE	NT	11000 B	7000 B	13100 B	NT	11000 B	8990 B	NT	3580 B
Arsenic	20	NLE	NT	4.98	3.65	5.40	NT	11.4	4.64	NT	2.04
Barium	47000	NLE	NT	20.6 B	13.4 B	40.7 B	NT	15.9 B	32.7 B	NT	6.15 B
Beryllium	140	NLE	NT	0.637	0.508	0.590	NT	1.33	0.615	NT	0.326
Cadmium	100	NLE	NT	0.194	0.0962	0.362	NT	0.196	0.319	NT	0.0535
Calcium	NLE	NLE	NT	1660 B	1400 B	21100 B	NT	693 B	24100 B	NT	280 B
Chromium	NLE	NLE	NT	57.7 B	42.9 B	43.5 B	NT	96.4 B	54.5 B	NT	30.8 B
Cobalt	NLE	NLE	NT	1.11	1.43	8.68	NT	1.42	3.13	NT	0.326 U
Copper	45000	NLE	NT	8.57 B	7.79 B	29.3 B	NT	5.09 B	20.0 B	NT	3.28 B
Iron	NLE	NLE	NT	18400 B	16200 B	20100 B	NT	39500 B	19800 B	NT	8350 B
Lead	800	NLE	NT	5.10	4.66	30.1	NT	1.20	51.6	NT	1.40
Magnesium	NLE	NLE	NT	1940 B	1330 B	4740 B	NT	4300 B	3400 B	NT	871 B
Manganese	NLE	NLE	NT	52.7 B	96.2 B	127 B	NT	39.4 B	93.3 B	NT	15.3 B
Mercury	270	NLE	NT	0.100 U	0.101 U	0.098 U	NT	0.096 U	0.099 U	NT	0.099 U
Nickel	2400	NLE	NT	5.79	7.16	14.1	NT	5.97	9.05	NT	3.63
Potassium	NLE	NLE	NT	3070 B	1860 B	2760 B	NT	9520 B	2540 B	NT	1960 B
Sodium	NLE	NLE	NT	35.244 U	37.691 U	688	NT	36.431 U	40.061 U	NT	37.124 U
Vanadium	7100	NLE	NT	46.7	36.6	65.3	NT	60.0	65.3	NT	24.5
Zinc	1500	NLE	NT	39.8	43.6	53.6	NT	61.5	58.2	NT	28.0

¹ NJDEP Residential Direct Contact Soil Cleanup Criteria per NJAC 7:26D, 1999. Beryllium, Copper and Lead criteria per NJAC 7:26D, 2008.

² NJDEP Non-Residential Direct Contact Soil Cleanup Criteria per NJAC 7:26D, 1999. Beryllium, Copper and Lead criteria per NJAC 7:26D, 2008.

³ NJDEP Impact to Groundwater Soil Cleanup Criteria per NJAC 7:26D, 1999.

DUP = Duplicate Sample.

ft. bgs = Feet below ground surface.

B = The compound was found in the associated method blank as well as in the sample.

D = Sample was diluted.

E = The compound's concentration exceeds the calibration range of the instrument for that specific analysis.

J = Mass spec and retention time data indicate the presence of a compound however the result is less than the MDL but greater than zero.

U = The compound was analyzed for but not detected.

NT = Not tested.

NLE = No limit established.

mg/kg = milligram per kilogram.

Bold = Analyte was detected.

Shaded = Concentration exceeds level of concern.

(Surface soil compared to NRDCSCC. Subsurface soil compared to IGWSCC when available, otherwise compared to NRDCSCC).

Table 3.14-4
Fort Monmouth Phase II Site Investigation, Parcel 57
Summary of Analytical Parameters Detected in Groundwater (µg/L)

Chemical	Sample ID: Lab ID: Date Sampled: Screened Interval (ft. bgs):	Analytical Results					
		P57-A-1	P57-A-3	P57-A-3 DUP	P57-A-5	P57-A-7	P57-A-9
		7053104	7053105	7053103	7053106	7053107	7053108
		12/11/2007	12/11/2007	12/11/2007	12/11/2007	12/11/2007	12/11/2007
		7-12	4-9	4-9	4-14	4-14	8-18
Quality Criteria ¹	Result	Result	Result	Result	Result	Result	
Volatiles							
Acetone	6000	0.85 U	0.85 U	0.85 U	0.85 U	31.13 B	0.85 U
Carbon disulfide	700	0.44 U	0.44 U	0.44 U	0.44 U	0.28 J	0.10 J
Methyl ethyl ketone (2-Butanone)	300	0.14 U	0.14 U	0.14 U	0.14 U	4.14	0.14 U
Tertiary butyl alcohol	100	1.82 U	10.49	1.82 U	1.82 U	1.82 U	1.82 U
Toluene	600	0.23 J	0.27 U	0.27 U	1.02	0.77	0.21 J
Semi-Volatiles							
bis(2-Ethylhexyl)phthalate	3	1.28 U	1.94	1.28 U	1.28 U	1.28 U	1.28 U
Metals							
Aluminum	200	592 B	16100 B	266 B	13400 B	11000 B	43400 B
Antimony	6	0.70 U	0.70 U	0.70 U	0.70 U	1.13	0.70 U
Arsenic	3	2.70 U	5.24	2.70 U	3.94	4.01	6.73
Barium	6000	66.2	189	165	225	224	26.8
Beryllium	1	0.454	0.249	0.100 U	2.12	1.98	10.9
Cadmium	4	0.274	1.46	1.15	0.284	0.917	14.3
Calcium	NLE	3300 B	290000 B	284000 B	33200 B	63400 B	73300 B
Chromium (Total)	70	0.692 B	45.5 B	0.640 B	69.8 B	105 B	3.57 B
Cobalt	100*	3.79	1.75	0.755	9.62	10.5	147
Copper	1300	1.72	27.7	6.58	10.7	137	43.4
Iron	300	323 U	17100	323 U	138000	25200	17700
Lead	5	0.700 U	3.31	0.700 U	0.700 U	829	3.07
Magnesium	NLE	5370	14000	12900	22000	6600	37500
Manganese	50	46.4 B	62.7 B	43.5 B	502 B	765 B	2710 B
Nickel (Soluble Salts)	100	7.38 B	7.18 B	0.300 U	16.6 B	24.0 B	372 B
Potassium	NLE	2850 B	72600 B	68500 B	6720 B	2500 B	5480 B
Selenium	40	4.89 B	2.70 U	2.70 U	2.70 U	2.70 U	2.70 U
Sodium	50000	20900	3070000 E	3110000 E	156000	6790	26000
Vanadium	NLE	0.500 U	95.3	17.6	56.9	68.8	3.07
Zinc	2000	23.6	62.7	20.0	171	145	1580

¹ Higher of Practical Quantitation Limits (PQLs) & Groundwater Quality Criterion (GWQC) per NJAC 7:9-6, 2005 (* Interim GWQC).

DUP = Duplicate Sample.

ft. bgs = Feet below ground surface.

Bold = Analyte was detected.

Shaded = Concentration exceeds Quality Criteria.

µg/L = micrograms per liter.

NLE = No limit established.

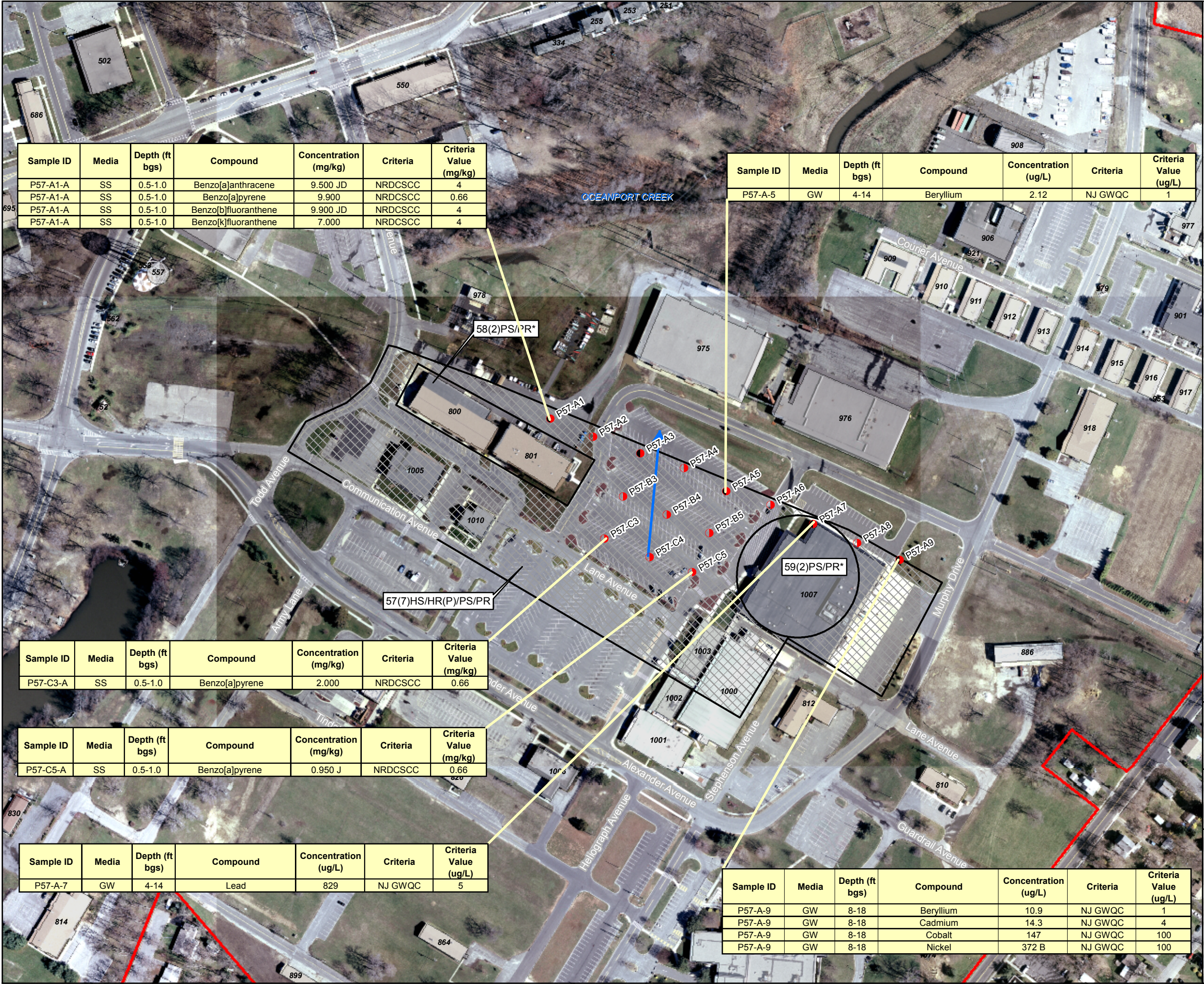
B = The compound was found in the associated method blank as well as in the sample.

D = Sample was diluted.

E = The compound's concentration exceeds the calibration range of the instrument for that specific analysis.

J = Mass spec and retention time data indicate the presence of a compound however the result is less than the MDL but greater than zero.

U = The compound was analyzed for but not detected.



Sample ID	Media	Depth (ft bgs)	Compound	Concentration (mg/kg)	Criteria	Criteria Value (mg/kg)
P57-A1-A	SS	0.5-1.0	Benzo[a]anthracene	9.500 JD	NRDCSCC	4
P57-A1-A	SS	0.5-1.0	Benzo[a]pyrene	9.900	NRDCSCC	0.66
P57-A1-A	SS	0.5-1.0	Benzo[b]fluoranthene	9.900 JD	NRDCSCC	4
P57-A1-A	SS	0.5-1.0	Benzo[k]fluoranthene	7.000	NRDCSCC	4

Sample ID	Media	Depth (ft bgs)	Compound	Concentration (ug/L)	Criteria	Criteria Value (ug/L)
P57-A-5	GW	4-14	Beryllium	2.12	NJ GWQC	1

Sample ID	Media	Depth (ft bgs)	Compound	Concentration (mg/kg)	Criteria	Criteria Value (mg/kg)
P57-C3-A	SS	0.5-1.0	Benzo[a]pyrene	2.000	NRDCSCC	0.66

Sample ID	Media	Depth (ft bgs)	Compound	Concentration (mg/kg)	Criteria	Criteria Value (mg/kg)
P57-C5-A	SS	0.5-1.0	Benzo[a]pyrene	0.950 J	NRDCSCC	0.66

Sample ID	Media	Depth (ft bgs)	Compound	Concentration (ug/L)	Criteria	Criteria Value (ug/L)
P57-A-7	GW	4-14	Lead	829	NJ GWQC	5

Sample ID	Media	Depth (ft bgs)	Compound	Concentration (ug/L)	Criteria	Criteria Value (ug/L)
P57-A-9	GW	8-18	Beryllium	10.9	NJ GWQC	1
P57-A-9	GW	8-18	Cadmium	14.3	NJ GWQC	4
P57-A-9	GW	8-18	Cobalt	147	NJ GWQC	100
P57-A-9	GW	8-18	Nickel	372 B	NJ GWQC	100

LEGEND

- Geoprobe Soil Sample Location
- Geoprobe Soil & Groundwater Sample Location
- Generalized Groundwater Flow Direction.
Direction of Generalized Groundwater Flow derived from qualitative evaluation of surface topography, surface water features, and pre-existing IRP site groundwater potentiometric maps where available.
- Building
- Installation Boundary

ECP PARCEL CATEGORY DEFINITIONS

- Areas that are not evaluated or require additional evaluation.

* Parcel not included in Site Investigation. Information pertaining to parcels not included in this Site Investigation is presented in the Fort Monmouth Phase I ECP Report (January 2007).

BRAC PARCEL LABEL DEFINITIONS

- CONTAMINATION DESCRIPTION
 - HS - Hazardous Substance Storage
 - HR - Hazardous Substance Release
 - PS - Petroleum Storage
 - PR - Petroleum Release
 - (P) - Possible Release or Disposal
- CATEGORY NUMBER
- PARCEL NUMBER



Base Realignment and Closure 2005



Shaw Environmental, Inc.

FIGURE 3.14-1

FORT MONMOUTH ECP
SITE INVESTIGATION

PARCEL 57 SAMPLE LOCATIONS
AND CONSTITUENTS OF CONCERN

MAIN POST
FORT MONMOUTH
NEW JERSEY